AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claim 1.   (Currently amended) A device for the separation of a component in a liquid sample prior to the detection of an analyte in said <u>liquid</u> sample, said device having a <u>non-porous</u> substrate comprising<u>:</u>

a sample receiving zone[[,]]<u>;</u> ~~optionally~~

~~a reaction zone,~~

<u>a substrate surface;</u>

<u>a separator element wherein said separator element is provided adjacent to or in said receiving zone; and</u>

a transport or incubation zone ~~connecting the~~ <u>connected to said</u> receiving <u>zone</u> ~~and reaction zone, respectively,~~ <u>thereby</u> forming a flow path on ~~a~~ <u>said</u> substrate, ~~wherein said substrate is a non-porous substrate, and~~ <u>wherein</u> at least part of said flow path consists of areas of projections substantially vertical to said <u>substrate</u> surface, <u>said projections</u> having a height ~~(H)~~, <u>a</u> diameter ~~(D)~~ and <u>a</u> reciprocal spacing ~~(t1, t2)~~ such[[,]] that lateral capillary flow of said liquid sample in said <u>transport or incubation</u> zone ~~is~~ <u>may be</u> achieved[[,]] ~~and where means for separation are provided adjacent to or in the zone for receiving the sample.~~

Claim 2.   (Currently amended) The device according to claim 1, wherein said ~~means for separation~~ <u>separator element</u> ~~consist~~ <u>consists</u> of an area on ~~the~~ <u>said</u> substrate having <u>second</u> projections substantially vertical to the surface of said substrate, ~~and~~ <u>said second projections</u> having a height ~~(H)~~, diameter ~~(D)~~ and reciprocal spacing ~~(t1, t2) such, that~~ ~~the compound~~ <u>said second projections adapted to prevent said component</u> to be separated

from ~~the~~ liquid sample ~~is substantially prevented~~ from substantially leaving ~~the~~ said receiving zone.

Claim 3.   (Currently amended) The device according to claim 1, wherein said receiving zone further contains ~~means enhancing~~ an enhancing element adapted to enhance the separation capability of said ~~means for separation~~ separator element.

Claim 4.   (Currently amended) The device according to claim ~~1~~ 3, ~~said receiving zone further containing means enhancing the separation capability of said means for separation, wherein said means are~~ wherein said enhancing element are compounds capable of forming aggregates of said component to be separated.

Claim 5.   (Currently amended) The device according to claim ~~1~~ 4, ~~said receiving zone further containing means enhancing the separation capability of said means for separation,~~ wherein said ~~means~~ compounds are beads[[,]] derivatised with, or carrying on their surface, compounds capable of forming aggregates of said component to be separated.

Claim 6.   (Currently amended) The device according to claim 1, ~~said means for separation consisting of an area on the substrate having projections substantially vertical to the surface of said substrate, and having a height (H), diameter (D) and reciprocal spacing (t1, t2) such, that the compound to be separated from the sample is substantially prevented from leaving the receiving zone,~~ wherein said reciprocal spacing ~~(t1, t2)~~ of said second projections is in the interval of 1 – 100 µm.

Claim 7.   (Currently amended) The device according to claim ~~1~~ 6, ~~said means for separation consisting of an area on the substrate having projections substantially vertical to the surface of said substrate, and having a height (H), diameter (D) and reciprocal spacing (t1, t2) such, that the compound to be separated from the sample is substantially prevented from leaving the receiving zone, said reciprocal spacing (t1, t2) being in the interval of 1 — 100 µm,~~ wherein said reciprocal spacing of said second projections varies ~~within said means for separation,~~ forming a gradient in the direction of ~~the~~ flow.

Claim 8. (Currently amended) The device according to claim ~~1~~ 7, ~~said means for separation consisting of an area on the substrate having projections substantially vertical to the surface of said substrate, and having a height (H), diameter (D) and reciprocal spacing (t1, t2) such, that the compound to be separated from the sample is substantially prevented from leaving the receiving zone, said spacing varying within said means for separation, forming a gradient in the direction of the flow,~~ wherein said reciprocal spacing of said second projections varies from about 7 to about 1 μm.

Claim 9. (Currently amended) The device according to claim 1, wherein said receiving zone forms a basin ~~capable of containing~~ adapted to contain ~~the~~ a part of the sample separated by ~~the~~ said ~~means for separation~~ separator element.

Claim 10. (Currently amended) The device according to claim 1, wherein said ~~means for separation are~~ separator element is a separator element ~~means~~ having specific affinity ~~to the~~ for said component to be separated.

Claim 11. (Currently amended) The device according to claim ~~1~~ 10, ~~said means for separation having specific affinity to the component to be separated,~~ wherein said ~~means for separation are~~ separator element having specific affinity for said component to be separated is a ~~compounds~~ compound[[,]] that is soluble or ~~dispersable~~ dispersible in ~~the~~ said liquid sample[[,]] and predispensed in ~~the sample~~ said receiving zone.

Claim 12. (Currently amended) The device according to claim ~~1~~ 10, ~~said means for separation having specific affinity to the component to be separated,~~ wherein said ~~means for separation~~ separator element having specific affinity for said component to be separated are second projections substantially vertical to the surface of said substrate, ~~and~~ said second projections having a height ~~(H)~~, diameter ~~(D)~~ and reciprocal spacing ~~(t1, t2) such,~~ that said second projections adapted to allow capillary flow of the sample ~~is possible~~, ~~and~~ said second projections having, bound to their surface, agents with specific affinity to ~~the~~ said component to be separated.

Claim 13. (Currently amended) The device according to claim ~~1~~ 10, ~~said means for separation having specific affinity to the component to be separated,~~ wherein said ~~means for separation~~ separator element having specific affinity for said component to be separated are beads having, bound to their surface, agents with specific affinity ~~to the~~ for said component to be separated.

Claim 14. (Currently amended) The device according to claim ~~1~~ 13, ~~said means for separation having specific affinity to the component to be separated, said means being beads having, bound to their surface, agents with specific affinity to the component to be separated,~~ wherein said beads have a magnetic core.

Claim 15. (Currently amended) The device according to claim ~~1~~ 14, ~~said means for separation having specific affinity to the component to be separated, said means being beads having, bound to their surface, agents with specific affinity to the component to be separated, said beads having a magnetic core,~~ wherein said device further comprises a magnet.

Claim 16. (Currently amended) The device according to claim ~~1~~ 15, ~~said means for separation having specific affinity to the component to be separated, said means being beads having, bound to their surface, agents with specific affinity to the component to be separated, said beads having a magnetic core, said device comprising a magnet,~~ wherein said magnet is a permanent magnet or an electromagnet.

Claim 17. (Currently amended) The device according to claim ~~1~~ 10, ~~said means for separation having specific affinity to the component to be separated,~~ wherein said receiving zone forms a basin capable of containing ~~the~~ a part of ~~the~~ said liquid sample separated ~~from the flow by the~~ by said ~~means for separation~~ separator element.

Claim 18. (Currently amended) The device according to claim ~~1~~ 17, ~~said means for separation having specific affinity to the component to be separated, said receiving zone forming a~~

~~basin capable of containing the part of the sample separated from the flow by the means for separation,~~ wherein a magnet is positioned in the vicinity of said basin.

Claim 19. (Currently amended) The device according to claim 1, wherein said ~~means for separation comprise~~ separator element comprises an ~~means~~ element for subjecting the sample to ultrasonic standing waves.

Claim 20. (Currently amended) The device according to claim ~~1~~ 19, ~~said means for separation comprising means for subjecting the sample to ultrasonic standing waves,~~ wherein said ~~means~~ element for subjecting the sample to ultrasonic standing waves ~~comprise~~ comprises at least two ultrasonic energy sources arranged to establish a pattern of nodes within ~~the~~ said flow path by interference between their outputs, defining a standing wave.

Claim 21. (Currently amended) The device according to claim ~~1~~ 19, ~~said means for separation comprising means for subjecting the sample to ultrasonic standing waves,~~ wherein said means for subjecting the sample to ultrasonic standing waves ~~comprise~~ comprises at least one ultrasonic energy source and a reflector, arranged to establish a pattern of nodes within ~~the~~ said flow path by interference between their outputs, defining a standing wave.

Claim 22. (Currently amended) The device according to claim ~~1~~ 19, ~~said means for separation comprising means for subjecting the sample to ultrasonic standing waves,~~ wherein said receiving zone forms a basin capable of containing ~~the~~ a part of ~~the~~ said liquid sample separated by ~~the means for separation~~ said separator element.

Claim 23. (Currently amended) The device according to claim 1, wherein said substrate is a plastic substrate~~, preferably a thermoplastic substrate~~.

Claim 24. (Currently amended) The device according to claim 1, wherein said substrate is a silicon substrate or a glass substrate.

Claim 25. (Currently amended) The device according to claim ~~1~~ 5, ~~said receiving zone further containing means enhancing the separation capability of said means for separation, wherein said means being beads, derivatised with or carrying on their surface compounds capable of forming aggregates of said component to be separated,~~ wherein said beads are ~~chosen among beads comprising~~ selected from the group consisting of glass beads, polymer beads, metal beads, and ~~or combinations thereof~~ a combination of glass beads, polymer beads, or metal beads.

Claim 26. (Currently amended) A method for ~~use in~~ the detection of an analyte in a liquid sample, wherein said detection ~~taking place in a process~~ occurs on a non-porous substrate, said method comprising:

applying said sample to a receiving zone on said substrate;

~~where at least a subset of said sample is transported~~ transporting, through capillary action, said liquid sample through a flow path on said substrate, ~~from a receiving zone where said sample is added, to an optional zone where a reaction / detection takes place, said transport by capillary action defining a flow path, wherein said substrate is a non-porous substrate, at least part of~~ wherein said flow path ~~consists of~~ comprises areas of projections substantially vertical to ~~said~~ a surface of said substrate, ~~and~~ said projections having a height ~~(H)~~, diameter ~~(D)~~ and reciprocal spacing ~~(t1,t2) such, that~~;

achieving lateral capillary flow of said liquid sample ~~is achieved,~~; and ~~that~~

~~separation of~~ separating ~~unwanted components is performed~~ a component from said liquid sample without interruption of said lateral capillary flow.

Claim 27. (Currently amended) The method according to claim 26, wherein said ~~separation~~ separating is achieved using ~~filtering means~~ a separator element having second projections substantially vertical to ~~the~~ said surface of said substrate, and having a height ~~(H)~~, diameter ~~(D)~~ and reciprocal spacing, ~~(t1, t2) such, that the compound~~ said separator

adapted to substantially prevent said component to be separated from ~~the~~ said liquid sample ~~is substantially prevented~~ from leaving ~~the~~ receiving zone.

Claim 28. (Currently amended) The method according to claim 26, wherein ~~means enhancing the separation capability of said means for separation are provided in~~ said receiving zone further contains an enhancing element adapted to enhancing the separating ability of said separator element.

Claim 29. (Currently amended) The method according to claim ~~26~~ 28, ~~means enhancing the separation capability of said means for separation being provided in said receiving zone,~~ wherein said ~~means~~ enhancing element ~~are~~ comprises compounds capable of forming aggregates of said component to be separated.

Claim 30. (Currently amended) The method according to claim ~~26~~ 29, ~~means enhancing the separation capability of said means for separation being provided in said receiving zone,~~ wherein said ~~means~~ compounds are beads [[,]] derivatised with, or carrying on their surface, compounds capable of forming aggregates of said component to be separated.

Claim 31. (Currently amended) The method according to claim ~~26~~ 27, wherein said reciprocal spacing ~~(t1, t2)~~ of said second projections is in the interval of about 1 to about 100 μm.

Claim 32. (Currently amended) The method according to claim ~~26~~ 31, ~~said reciprocal spacing (t1, t2) being in the interval of about 1 to about 100 μm,~~ wherein said reciprocal spacing (t1, t2) of said second projections varies ~~within said filtering means for separation~~, forming a gradient in the direction of the flow.

Claim 33. (Currently amended) The method according to claim ~~26~~ 32, ~~said reciprocal spacing (t1, t2) being in the interval of about 1 to about 100 μm, said spacing varying within said means for separation, forming a gradient in the direction of the flow,~~ wherein said spacing varies from about 7 to about 1 μm.

Claim 34. (Currently amended) The method according to claim 26, wherein ~~the part of the sample~~ ~~separated by the means for separation~~ <u>a part of said liquid sample that is separated by</u> <u>said separator element</u> is contained in a basin, formed by said receiving zone.

Claim 35. (Currently amended) The method according to claim 26, wherein ~~said separation~~ <u>separating</u> is enhanced by ~~means~~ <u>a enhancing element, said enhancing element</u> having specific affinity to ~~the~~ <u>said</u> component to be separated <u>from said liquid sample</u> and wherein said ~~means~~ <u>enhancing element</u> ~~are~~ <u>is</u> provided in ~~the~~ <u>said</u> flow path.

Claim 36. (Currently amended) The method according to claim ~~26~~ <u>35</u>, ~~said separation being~~ ~~enhanced by means having specific affinity to the component to be separated and said~~ ~~means are provided in the flow path,~~ wherein said ~~means~~ <u>enhancing element</u> ~~are~~ <u>comprises second</u> projections substantially vertical to ~~the~~ <u>said</u> surface of said substrate, ~~and~~ <u>said second projections</u> having a height ~~(H)~~, diameter ~~(D)~~ and reciprocal spacing ~~(t1,~~ ~~t2) such, that~~ <u>wherein said second projections are adapted to allow</u> capillary flow of ~~the~~ <u>said liquid</u> sample ~~is possible~~, and <u>wherein</u> said <u>second</u> projections are provided with, bound to their surface, agents with specific affinity to ~~the~~ <u>said</u> component to be separated.

Claim 37. (Currently amended) The method according to claim ~~26~~ <u>35</u>, ~~said separation being~~ ~~enhanced by means having specific affinity to the component to be separated and said~~ ~~means are provided in the flow path,~~ wherein said ~~means~~ <u>enhancing element having</u> <u>specific affinity to said component to be separated comprises</u> ~~are~~ beads having, bound to their surface, agents with specific affinity to ~~the~~ <u>said</u> component to be separated.

Claim 38. (Currently amended) The method according to claim ~~26~~ <u>37</u>, ~~said separation being~~ ~~enhanced by means having specific affinity to the component to be separated and said~~ ~~means are provided in the flow path, said means being beads having, bound to their~~ ~~surface, agents with specific affinity to the component to be separated,~~ wherein said beads have a magnetic core.

Claim 39.   (Currently amended) The method according to claim ~~26~~ 38, ~~said separation being enhanced by means having specific affinity to the component to be separated and said means are provided in the flow path, said means being beads having, bound to their surface, agents with specific affinity to the component to be separated, said beads having a magnetic core,~~ wherein said beads are retained or removed from the flow by a magnet arranged in or adjacent to said ~~device~~ flow path.

Claim 40.   (Currently amended) The method according to claim ~~26~~ 39, ~~said separation being enhanced by means having specific affinity to the component to be separated and said means are provided in the flow path, said means being beads having, bound to their surface, agents with specific affinity to the component to be separated, said beads having a magnetic core, said beads being retained or removed from the flow by a magnet arranged in or adjacent to said device,~~ wherein said magnet is a permanent magnet or an electromagnet.

Claim 41.   (Currently amended) The method according to claim ~~26~~ 35, ~~said separation being enhanced by means having specific affinity to the component to be separated and said means are provided in the flow path, wherein the part of the sample separated from the flow by the means for separation~~ is contained in a basin, formed by said receiving zone.

Claim 42.   (Currently amended) The method according to claim ~~26~~ 41, ~~said separation being enhanced by means having specific affinity to the component to be separated and said means are provided in the flow path, the part of the sample separated from the flow by the means for separation being contained in a basin formed by said receiving zone,~~ wherein a magnet is positioned in the vicinity of said basin.

Claim 43.   (Currently amended) The method according to claim 26, wherein said ~~separation~~ separating is enhanced by subjecting ~~the~~ said sample to ultrasonic standing waves.

Claim 44.   (Currently amended) The method according to claim ~~26~~ 43, ~~said separation being enhanced by subjecting the sample to ultrasonic standing waves, wherein the sample is~~

~~subjected to~~ wherein said ultrasonic standing waves are generated by at least two ultrasonic energy sources arranged to establish a pattern of nodes by interference between their outputs, defining a standing wave within ~~the~~ said flow path.

Claim 45. (Currently amended) The method according to claim ~~26~~ 43, ~~said separation being enhanced by subjecting the sample to ultrasonic standing waves, wherein the sample is subjected to~~ wherein said ultrasonic standing waves are generated by at least one ultrasonic energy source and a reflector, arranged to establish a pattern of nodes by interference between their outputs, defining a standing wave within ~~the~~ said flow path.

Claim 46. (Currently amended) The method according to claim ~~26~~ 43, ~~said separation being enhanced by subjecting the sample to ultrasonic standing waves, wherein the part of the sample separated by the means for separation~~ wherein a part of said liquid sample that is separated is contained in a basin formed by said receiving zone.

Claim 47. (Currently amended) The method according to claim 26, wherein said substrate is a plastic substrate~~, preferably a thermoplastic substrate~~.

Claim 48. (Currently amended) The method according to claim 26, wherein said substrate is a silicon substrate or a glass substrate.

Claim 49. (Currently amended) The method according to claim ~~26~~ 29, ~~the means enhancing the separation capability of said means for separation being provided in said receiving zone, said means being compounds capable of forming aggregates of said component to be separated,~~ wherein said compounds comprise a chemical group ~~are chosen among~~ selected from the group consisting of hydrophilic groups, hydrophobic groups, positively and/or negatively charged groups, silicon oxide, carbohydrates, lectins, amino acids, macromolecules, and antibodies~~, or combinations thereof~~.

Claim 50. (Currently amended) The method according to claim ~~26~~ 30, ~~the means enhancing the separation capability of said means for separation being provided in said receiving zone,~~

~~said means being beads, derivatised with or carrying on their surface compounds capable of forming aggregates of said component to be separated,~~ wherein said compounds derivitised with, or carried on the surface of said beads, comprise a chemical group ~~are chosen among~~ selected from the group consisting of hydrophilic groups, hydrophobic groups, positively and/or negatively charged groups, silicon oxide, carbohydrates, lectins, amino acids, macromolecules, and antibodies~~, or combinations thereof~~.

Claim 51.   (Currently amended) The method according to claim ~~26~~ 30, ~~means enhancing the separation capability of said means for separation being provided in said receiving zone, said means being beads, derivatised with or carrying on their surface compounds capable of forming aggregates of said component to be separated,~~ wherein said beads are ~~chosen among beads comprising~~ selected from the group consisting of glass beads, polymer beads, metal beads, and ~~or combinations thereof~~ a combination of glass beads, polymer beads, or metal beads.

Claim 52.   (Currently amended) A method for separating a component in a sample, wherein a device according to ~~any one of claims 1—25~~ claim 1 is used.

Claim 53.   (New) The device according to claim 23, wherein said plastic substrate is a thermoplastic substrate.

Claim 54.   (New) The method according to claim 47, wherein said plastic substrate is a thermoplastic substrate.